"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

S/120/62/000/003/036/048
E039/E135

AUTHORS: Gorlov, [illegible], Tetrahin, G.G., and Trapeznikov, A.A.

TITLE: [illegible] with freely suspended discs and continuous recording for structured colloidal systems and polymer solutions

PERIODICAL: Pribory i tekhnika eksperimenta, no. 3, 1962, 153-157

TEXT: [illegible] rheogoniometer for the investigation of normal and tangential forces in colloidal systems and polymer solutions [illegible] with their deformation is described. The apparatus consists of a normal goniometer arrangement with a space for the investigation of deformations between a rotating cone and disc. Angles between cone and disc for two interchangeable cones are 3° 55' and 1° 22' 30". The cones are truncated by 0.04 mm. Results are given for a 2 % solution of aluminium naphthalate in vaseline [illegible] trace shows the simultaneous growth in time of the normal force acting along the axis of the rotating cone and the value of the torsional moment of the displacement force. Measurement of the dependence of the value of the normal force on radius of the filled part of the cone space showed that

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

Rheogoniometer with freely ... S/123/62/000/003/030/046
D039/D135

$$F_c = 1/2\, F_c\, \pi r^2$$

where F_c is the normal force per unit length at radius r. A capacity pickup is used to obtain signals showing the growth of the deformation process from a condition of rest to uniform flow. The influence of non-parallel axes for the discs and cones is investigated for various values of clearance between them.

There are 7 figures.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry, AS USSR)

SUBMITTED: September 12, 1961

Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIK, G. G.

Polymerized oils. I. S. Malikov, V. I. Zabel'skii, P. N. Bogatyrev, G. G. Petrzhik and S. M. Dridze. Russ. 53,401, June 30, 1938. Drying, semidrying or nondrying oil is polymerized at temps. up to 300° in the presence of 5-10% unsatd. org. compds., such as isoprene, undecylic or acrylic acids or their esters, styrene or divinylacetylene.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

TRAPEZNIKOV, A.A.; MOROZOV, A.S.; PETRZHIK, G.G.

Normal stresses in structurized colloidal systems, and the effect of the thixotropic recovery of structure on them. Koll. zhur. 22 no. 6:761-762 N-D '60. (MIRA 13:12)

1. Institut fizicheskoy khimii AN SSSR, Moskva Laboratoriya oleokolloidov i monosloyev.
(Colloids)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

TRAPEZNIKOV, A.A.; PETROHIK, G.G.

Electroconductivity of nonaqueous colloid systems. [illegible] of thixotropic gels of alkyd resins. Kolloidnyi zhur. [illegible] My-Je '66.

Electroconductivity of nonaqueous colloid systems. [illegible] of a thixotropic binder based on the alkyd resin [illegible] by polyamide resin in a flow. Ibid. [illegible]

1. Institut fizicheskoy khimii AN SSSR, Moskva. Submitted Nov. 29, 1963.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIK, G.G., kand.tekhn.nauk

Finishing of certain types of fabrics manufactured from a mixture of cotton and synthetic fibers. Tekst.prom. 21 no.9:60-62 S '61. (MIRA 14:10)

(Textile finishing)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIK, G.G., kand.tekhn.nauk

Shrinkage of textile fabrics. Nauka i zhizn' 28 no.1:77-78 Ja '61. (MIRA 14:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut khlopchatobumazhnoy promyshlennosti. (Textile research)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

TRAPEZNIKOV, A.A.; MOROZOV, A.S.; PETRZHIK, G.G.

Dependence of normal and shear stresses on the magnitude of strain when aluminum naphthenate gel passes to a steady flow from a state of rest. Dokl.AN SSSR 133 no.3:637-640 Jl '60. (MIRA 13:7)

1. Institut fizicheskoy khimii Akademii nauk SSSR. Predstavleno akad. S.I.Vol'fkovichem.
(Strains and stresses) (Naphthenic acid)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIK, [illegible]

Petrzhik, [illegible] - "Rubber-tr[illegible] conveyor [illegible] for agricultural [illegible] machinery", Nauch.-issled. trudy (Sekstr. [illegible] [illegible] [illegible]

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

FITZ[illegible], J. J.,
U.S. Mar[illegible], Miss. 57,401, June 30, 1939.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Production of dermatine on calenders. P. M. Bogatyrev and G. G. Petrzhik. *Nauch.-Issledovatel. Raboty Lab. Glavkhimkozh* 1939, 105-12. *Khim. Referat. Zhur* 1940, No. 4, 121. Dermatine was prepd. on differential 3- and 4-roller calenders, with moleskin, duck, canvas and cambric as foundation. Best results were obtained by using 100 parts of collonylin, 80 parts of dibutyl phthalate, 40 parts of castor oil, 100 parts of alc. and 125 parts of pigments. The mass, mixed in Werner-Pfleiderer mixers, is heated before use on rolls at 40-50°. The use of calenders simplifies the tech. process, decreases the amt. of the solvent required, and makes possible the use of EtOH instead of a complex solvent. W. R. Henn

CA

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

MOROZOV, A.S.; PETRZHIK, G.G.; TRAPEZNIKOV, A.A.

Rheogoniometer with a freely hung disc and continuous recording for cross-linked colloidal systems and polymer solutions. Prib. i tekh. eksp. 7 no.3:153-157 My-Je '62. (MIRA 16:7)

1. Institut fizicheskoy khimii AN SSSR.
(Goniometers) (Rheology) (Polymers)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

ARKHIPOVA, T.N., starshiy nauchnyy sotrudnik; PETRZHIK, G.G., starshiy nauchnyy sotrudnik; USPENSKIY, L.K., starshiy nauchnyy sotrudnik

Increasing the resistance to abrasion of rayon staple fabrics having a crease- and shrinkage-resistant finish. Tekst.prom. 22 no.6:65-67 Je '62. (MIRA 16:5)

1. TSentral'nyy nauchno-issledovatel'skiy institut khlopchatobumazhnoy promyshlennosti (TsNIBKhI).

(Textile finishing)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIK, G.G.; D'VYDOVA, Ye.Ya.; LEZNEVA, L.V.

Pigment dyeing of textile fabrics. Tekst.prom. 21 no.3:44-45 Mr '61. (MIRA 14:3)

(Textile fabrics) (Dyes and dyeing)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

S/020/60/133/003/030/041/XX
B004/B064

AUTHORS: Trapeznikov, A. A.; Morozov, A. S. and Petrznik, G. G.

TITLE: The Dependence of Normal and Shearing Stresses on the Extent of Deformation During the Transition of the Aluminum Naphthenate Gel From the State of Rest Into Steady Flow

PERIODICAL: Doklady Akademii nauk SSSR, 1960 Vol. 133, No. 3, pp. 637 - 640

TEXT: The authors aimed at a quantitative determination of the development in time of normal stress as a function of deformation during a continuous transition from the state of rest into steady flow. The experiments were conducted with a 2% solution of aluminum naphthenate gel in Vaseline oil. To render possible a simultaneous measurement of normal stress P_n and shearing stress P_τ, a rheogeniometric apparatus supplementing the plasto-viscosimeter was designed (Fig. 1). In principle, it consisted of a flat cone combined with a disk. The perpendicular displacement of the disk under the action of the normal force P_n and its rotation under the action of the

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

The Dependence of the Normal and Shearing Stresses on the Extent of Deformation During the Transition of the Aluminum Naphthenate Gel From the State of Rest Into Steady Flow

S/020/60/133/003/030/031/XX
B004/B064

torque of the tangential force F_τ were measured with a spring dynamometer and recorded with an electronic potentiometer of the type ЭПП-09 (EPP-09) or an МПО-2 (MPO-2) loop oscilloscope. Fig. 2 shows P_n and P_τ as a function of deformation, ε, at various rates of deformation. The viscosity determined from $\eta = P_{\tau s}\dot{\varepsilon}$ (the subscript s denotes steady flow), falls, as a rule with rising $\dot{\varepsilon}$ (Fig. 3). Fig. 2 indicates that P_n and P_τ have a maximum. T. G. Shalopalkina and A. A. Trapeznikov obtained the same result in 1955, as may be seen from Fig. 4. The experimental data show that at $\varepsilon > 1700$ the structure of the system undergoes changes exerting a stronger effect on normal stress than on tangential stress. The normal stress depends on the entanglement of the particles. The longer and the more entangled they are, the greater is F_n in the stress. The second maximum P_{n2} and $P_{\tau 2}$ is due to the destruction of structural elements that, after the destruction of the initial network, were formed by orientation in the flow. There are 4 figures

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

SIMIGIN, P.A.; ZUSMAN, M.N.; RAYKHLIN, F.I.; ROGOVAYA, I.V., redaktor; GORDON, N.B.; retsenzent; PETRZHIK, G.G., retsenzent; MEDVEDYEV, L.Ya., tekhnicheskiy redaktor.

[Protective impregnation of textile fabrics] Zashchitnye propitki tekstil'nykh materialov. Pod red. I.V. Rogovoi. Moskva, Gos. nauchno-tekhn. izd-vo M-va legkoi promyshl. SSSR. 1957. 298 p. (MIRA 10:6)

(Textile finishing)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHKEVICH, M.P.

Medicolegal expert testimony for the exclusion of maternity. Sud.-med.ekspert. 2 no.4:58-59 O-D '59. (MIRA 13:5)

1. Kafedra sudebnoy meditsiny (zav. - dotsent Z.I. Safonova) Omskogo meditsinskogo instituta i Byuro sudebnomeditsinskoy ekspertizy Omskogo oblastnogo otdela zdravookhraneniya.
(BLOOD GROUPS)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

[illegible]

[illegible] of rolling mills in the German Democratic Republic. [illegible] 428-428 [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] problem.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

BEM, Ya. [Bohm, J.]; PETRZHILKA, V. [Petrzilka, V.]; SUK, M.

Peripheral interactions of 7 Bev. π^--mesons and nucleons. Zhur. eksp.i teor.fiz. 44 no.5:1497-1499 My '63. (MIRA 16:6)

1. Cheshskoye vyssheye tekhnicheskoye uchilishche, Praga.
(Mesons) (Nucleons)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZIK, J.

621.317.784

1935. CALORIMETRIC WATTMETER FOR THE 3000 Mc/s

HAND, J. Petrzik

Elektrotechnický obzor, Vol. 48, No. 1, 33-7 (1959). In Czech.

The device consists of: (1) a rectangular waveguide operating with the H_{01} wave and terminated with a matching load, (2) a temperature measuring device, and (3) a flow meter. The load is in form of a glass tube having an inner diameter of 9 mm, wall thickness of 1 mm and a length of 600 mm; a constant flow of water is maintained in the tube; this ensures that the tube acts as a 40 dB attenuator giving a standing wave ratio of 1.07 at 3000 ± 400 Mc/s and is capable of absorbing power up to 1 kW. The absorbed power is measured by registering the water temperatures at the input and output of the load; this is done by means of a differential thermocouple. Similarly, the flow of water is measured by a differential thermocouple, which is connected across a heating spiral. The wattmeter has three ranges (15 to 250 W, 30 to 500 W and 60 to 1000 W) and gives a maximum error of ± 10%. Only a general description of the device is given.

R.S.Sidorowicz

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

CZECHOSLOVAKIA

PETRZIK, Jan, MVDr

Dodoma, Tanzania

Brno, Veterinarstvi, No 3 [March] 1967, pp 132-135

"The veterinary service in Tanzania."

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIKOVSKAYA, L.M., kand. tekhn. nauk

Antibacterial properties of a juice prepared from several tomato varieties. Pishch. prom. no.1:103-110 '65. (MIRA 18:11)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIKOVSKAYA, L.M.

Bactericide properties of tomato products. Izv.vys.ucheb.zav.; pishch.tekh. no.1:87-93 '60. (MIRA 13:6)

1. Kafedra biokhimii i mikrobiologii Odesskogo tekhnologicheskogo instituta pishchevoy i kholodil'noy promyshlennosti.
(Tomato products) (Bactericides)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

KIROVA, Kira Aleksandrovna, dots., kand. tekhn. nauk; SLYUSARENKO, Tamara Platonovna, assistent; VESELOV, I.Ya., prof., retsenzent; PETRZHIKOVSKAYA, L.M., dots., retsenzent; BAKUSHINSKAYA, O.A., kand. biol. nauk, spets. red.; BELIKOVA, L.S., red.; SATAROVA, A.M., tekhn. red.

[Laboratory manual on microbiology in the food industry] Rukovodstvo k prakticheskim zaniatiiam po mikrobiologii pishchevykh proizvodstv. Moskva, Pishchepromizdat, 1961. 321 p. (MIRA 15:3)

(FOOD--MICROBIOLOGY)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIKOVSKAYA, L.M.

Effect of thermal treatment on the changes of carotene and lycopene in tomatoes. L. M. Petrzhikovskaya. *Trudy Odess. Tekhnol. Inst. Pishchevoi i Khladoprom.* 5, No. 2, 135–50(1953); *Referat. Zhur., Khim.*, 1954, No. 38928.—Results are reported (obtained under lab. exptl. conditions) about the effects of temp., time of cooking, and presence of heavy metals on the stability of carotenoids in tomatoes during the processing. Heating the tomato puree for 30 min. at temps. from 80 to 100° decreased the cont. of carotene 3.5–4.5% and lycopene 0.24–2.4%, which is less than the losses at 60° (12.6 and 2.3%, resp.). To reduce these losses a preliminary heating of the tomato puree to 80–15° followed by an aeration are recommended. The usual change of the light-red into a dark-red color of the tomato mass is probably due to the effect of intermediary oxidation products of the carotenoids. During the cooking the tomato mass at 60° and the following storage of the product Fe and to a much less degree Cu change the color of the product to a dark-brown tint, thus affecting its quality. R. Wurbach

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHIKEVICHIUTE, [illegible]

Dissertation: "[illegible]"

SO: [illegible]

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

L 06243-67 EWT(1) WVH/JK/GD

ACC NR: AT6021502 (A) SOURCE CODE: UR/0000/65/000/000/0103/0110

AUTHOR: Petrzhikovskaya, L. M. (Candidate of Technical Sciences)

ORG: none

18

BH

TITLE: Antibacterial properties of juices of various types of tomatoes

SOURCE: Ukraine. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya. Pishchevaya promyshlennost' (The food industry), no. 1. Kiev, Izd-vo Tekhnika, 1965, 103-110

TOPIC TAGS: food technology, bacteria, microbiology, ~~research facility, biologic research facility~~ PLANT GROWTH, PLANT CHEMISTRY

ABSTRACT: The antibacterial properties of juice from 26 different types of tomatoes and tomato hybrids, cultivated at experimental stations of the Genetic Plant Breeding Institute im. Lysenko (Genetiko-selektsionnyy institut), have been studied for 5 years. The study disclosed that 1) the juice of 6 of the specimens possess substantial antibacterial power, 2) the types of tomatoes displaying antibacterial properties in successive years have lower pH values and, as a rule, higher titratable acidity than other types of tomatoes, 3) the death rate of bacteria in juice of the

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

L 06243-67

ACC NR: AT6021502

same type of tomato fluctuates in a fixed range, and 4) the antibiotic properties of tomatoes can drastically change inasmuch as they depend on the conditions under which tomatoes grow and ripen. It is suggested that tomatoes for the extraction of juice be selected not only from the standpoint of agrobiological and palatable qualities but also from the standpoint of antibacterial properties. Orig. art. has: 1 table.

SUB CODE: 06/ SUBM DATE: 18Mar65/ ORIG REF: 003/ OTH REF: 002

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

BERANOVA, Hana; PETRZILA, Vladimir

Fast separation of rare earths and transplutonium elements by ion exchangers. Jaderna energie 9 no.8:266 Ag '63.

1. Ustav jaderneho vyzkumu, Ceskoslovenska akademie ved, Rez u Prahy.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, Oldrich, inz.

Some effects of the specialization of rolled stock production. Hut listy 16 no.3:168-171 Mr '61.

1. Technickoekonomicky vyzkumny ustav hutniho prumyslu a rudnych dolu.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, O.

"Specialization of rolling mills."

Hutnik. Praha, Czechoslovakia. Vol. 5, no. 11, Nov. 1955.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59, Unclas

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, Oldrich, Inz.

Unification of the work time and rest periods in rolling mills. Hut listy 17 no.2:133-135 F '62.

1. Technickoekonomicky vyzkumny ustav hutniho prumyslu a rudnych dolu, Praha.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, Oldrich, inz.

Minimum rolling metal quantity on modern rolling trains.
Hut listy 17 no.8:554-558 Ag '62.

1. Technickoekonomicky vyzkumny ustav hutniho prumyslu a rudnych dolu, Praha.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

2

PETRZHILKA, V.
CA

Flexural vibrations of quartz rods. V. Petrzilka and Al. Kotler. *Vědecké Rozh. Česk. Spol. Nauk, Trida Mat.-Přírod.* 1947, No. 9, 30 pp. (in English).—Study of rods cut at known angles to the elec. axis, and of the temp. coeffs. of frequency as functions of the angle of cutting.
Michael Fleischer

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, V.

CA

C 66

621.396.619.13 : 621.396.615.12

1906. Frequency modulation of a piezo-electric oscillator. V. PETRZILKA. *Slaboprv. Obz.*, 11, 140-1 (June, 1950) *In Czech*

The great advantage of the absolute frequency stability of quartz becomes a disadvantage when its use in an oscillator circuit for frequency modulation is contemplated. The natural frequencies of quartz oscillators depend not only on their elastic constants and geometrical dimensions, but also on the mechanical and electrical arrangement in which they are used. The author succeeded in frequency-modulating a valve oscillator using piezo-electric quartz by altering the air gap between the quartz and one of its holding electrodes. It is most simply achieved by letting this electrode form the diaphragm of a telephone. Vibration of the diaphragm at an acoustic frequency produces the periodic variations of the capacitance between electrode and quartz required for frequency-modulation of the crystal and hence of the oscillator. The possibility of this solution was experimentally verified. B. F. BRAUN

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZHILKA, V.

F

4887. ATOMIC REACTORS. Petrzilka, V. (Elektrotech. Obzor, July 1950, vol. 39, 185-195). On the basis of a bibliography of 30 references the author surveys the situation with regard to large scale atomic reactors and possibilities of practical application of atomic energy.

BEA

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

[illegible]ANOVA, H., [illegible]

Fast separation of rare earth [illegible]
[illegible]

1. Nuclear [illegible] Institute [illegible] Academy of Sciences [illegible]

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

Petržilka, V.

Production and use of radioisotopes. V. Petržilka. Chem. Zvesti 5, 200-31(1951).—A review with [illegible] references. Jan Micka

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

Miscellaneous

PETRZHILKA, V.

Radioactive Isotopes and Some of Their Properties of Importance in Metallurgy. V. Petrzilka. (*Hutnické Listy*, 1952, 7, 6, 285-290) (In Czech). This is a review of the fundamental physical aspects of radioactivity, including its measurement. A table of the most important isotopes applicable in metallurgy is given, together with data as to the type of decay, energy of the radiation, half-life, and the form in which the isotopes are generally and conveniently handled in practice

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[illegible]

[illegible]; [illegible], V.

Fyzikalny [illegible], /Fa[illegible] [illegible]ol. 3, no. [illegible], 1959) (Ma[illegible]-
[illegible]:

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Petrzilka V.

Cosmic rays. J. Doringer, V. Petrzilka, and L. Tomer. Sborník Československé [redacted] (Prague) 28, 378(1955); Referat. Zhur., Fiz. 1955, No. 451. M. L.

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5

British Abst.
B I
Aug. 1953

Autoradiography of steel by means of ^{32}P. N. Chvorinov, L. Jeníček, and V. Petrzílka (*Hutnické Listy*, 1952, 7, 298—302; *J. Iron Steel Inst.*, 1953, 178, 211). — Application of radioactive ^{32}P to study P segregation in steel castings and ingots is described, with details of the procedure for a quant. photometric evaluation of the P concn. from radiographs. R. B. CLARKE.

6-2-54

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

Category : CZECHOSLOVAKIA/Nuclear Physics - Cosmic rays C-7

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 653

Author : Petrzilka, V.
Title : 15 Years of Experimental Study of Cosmic Rays in the High Tatras

Orig Pub : Mat-fyz. casop., 1954, No 2, 89-94

Abstract: No abstract

Card : 1/1

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, V.

From uranium to the atomic electric power station, p.12. (Technicke Noviny. Praha, Vol 2, No. 16, August 1954)

SO: Monthly list of east European Accessions (EEAL), LC Vol 4, No. 6, June 1955, Uncl

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, VACLAV

8

2

The distribution of bismuth in copper at the time of solidification. Karel Tomiu and Václav Petrzilka (Czechoslov. Acad. Sci., Prague). *Československ. J. Phys.* 4, 94 (1954) (in Russian).—An autoradiographic study was made of an alloy prepd. by melting 1000 g. of electrolytic Cu over a gas flame and adding to it 2 g. of pure Bi and then 1 mc. of $Ra^{210}_{88}E$ on a Ni foil. The melt was carefully stirred and protected from oxidation by a layer of charcoal, and it was slowly cooled over the flame to cause coarse crystn. Disks cut from the regulus were surfaced by a diamond cutter, polished on fine emery paper, and then etched with dil. HNO_3. Specimens were attached to "Foma" x-ray plates for 4 days. An enlarged print of one of the plates was shown and it revealed Cu dendrites (dark) surrounded by the eutectic (light), in agreement with the phase diagram. It was planned to continue the work on alloys as dil. as 0.005% Bi in both cast and recrystd. conditions. A. G. Guy

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

LETRZILKA, V.

"Establishment of the Geophysical Laboratory of the Slovak Academy of Sciences." p. 95. (MATEMATICKO-FYZIKALNY CASOPIS, Vol. 4, No. 2, 1954, Bratislava, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4 No. 5, May 1955, Uncl.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

[illegible], V.

"Report on the activity of the [illegible] of Mathematic [illegible] the [illegible] quarter of 1955." [illegible],
[illegible] Czechoslovakia.

SO: Monthly List of East Euro [illegible] No. 5, May 1956, Uncl.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, V.

Toman, K.; Petrzilka, V. Distribution of [illegible] in [illegible] copper. [illegible] CZECHOSLOVAK JOURNAL OF PHYSICS. Prague, [illegible], Sept. 1956.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. [illegible], Nov. 1956, Uncl.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRLIK, ..

"Prospects [illegible] utilization of atomic energy for production of electric power." Energetika, Praha, [illegible] 4, [illegible] 7, July [illegible].

SO: Eastern European Accession List, vol. [illegible], no. [illegible], Nov. [illegible], [illegible].

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PETRZILKA, VACLAV

3

The distribution of bismuth in cast and recrystallized copper. Karel Toman and Václav Petrzilka. Czechosl. J. Phys. 5, 57-9(1955)(in English). Cf. C.A. 49, 9882c.—The radioisotope RaE^{210} is used to investigate the distribution of Bi in Cu alloys. The assumption that a preferential pptn. of Bi occurs at the grain boundaries in recrystd. Cu is not confirmed. The distribution of Bi in Cu in the original cast and the recrystd. state is identical. The soly. of Bi in Cu is less than 0.005%. George Meister

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, VACLAV

9801-EMC

The photonuclear effect on Ni, Cu and Zn was investigated by Zdenek Plochy, Vaclav Petrzilka, and Miroslav Roskos in Ceskosl. fiz. Zh., 5, No 2, 193-200, 1955, abstracted in Referativnyy Zhurnal, Fizika, No 1, 1956, 431). Cross sections of (γ,p) reactions on Ni, Cu, and Zn were measured. The 17.6 Mev gamma rays were proton induced on Li. Photoprotons were detected on nuclear photoemulsion "Agfa-K2" (200μ). A foil of the studied element was inserted between two plates covering about half the emulsion. The other uncovered emulsion part was used for determining the background produced by protons forming in the emulsion. The following values were obtained: $\sigma(\gamma,p)Ni=(8\pm4)\cdot10^{-2}$barn; $\sigma(\gamma,p)Cu=(7\pm4)\cdot10^{-2}$barn; $\sigma(\gamma,p)Zn=(4\pm2)\cdot10^{-2}$barn. The Cu cross sections concur well with the results of Raymond Chastel (Journal de physique et radium, 15, No 4, 240-250, 1954; ibid., 15, No 6, 459-469, 1954), abstracted in Referativnyy Zhurnal, Fizika, 1955, 11002, 13451. The assumption that the Ni nucleus has a closed shell was not experimentally confirm. because both cross sections (Ni and Cu) are of the same order. Affiliation of the three authors is given as Charles University, Physics Institute of the Czechoslovak Academy of Sciences, Prague.

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PETRZHILKA, V.

USSR/[illegible]

[illegible] USE OF ATOMIC ENERGY FOR PRODUCTION OF ELECTRICITY.

[illegible] (Energietechnik, May 1955, vol. 5, 199-205). The choice [illegible] for use in atomic power plants, plans for atomic plants, and the construction and operating costs are discussed. It is shown that electricity can be obtained from atomic power stations at the same cost as from conventional plants. (L).

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, V.

First industrial atomic power plant in the USSR; excerpt from the respective Soviet reports presented to the International Conference on Peaceful Utilization of Atomic Energy in Geneva.

p. 413
Vol. 5, no. 9, Sept. 1955
ZA SOCIALISTICKOU VEDU A TECHNIKU
Praha

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 5, no. 2
February 1956

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PUBLISHED, ..

Significance of the discoveries of Pierre and Marie Curie. [illegible]

[illegible] Monthly List of East European Accessions [illegible], Dec 1957, unc..

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

Petrzilka, V.

311. GEOMAGNETIC EFFECT OF BROAD SHOWERS OF COSMIC RAYS. J. Dubinský, P. Chalupka, V. Petrzilka and L. Tomášková. Czech. J. Phys., Vol. 6, No. 1, 29-34 (Jan., 1956). In Russian, with summary (1 p.) in English. 537.591.6

The paper describes an investigation into the effect of the terrestrial magnetic field upon the density distribution of extensive showers of cosmic rays. A unit consisting of two pairs of G.-M. counters separated by a 20 cm thick Pb absorber was used to define the core of the shower. A second similar unit of four G.-M. counters in parallel was set up successively south and west of the first unit for equal times and at equal distances. Measurements showed that for 30 m separation of counter units the density to the west is 40% greater than to the south; at 50 m separation this difference increased to 60%. These differences far exceed the limits of statistical error.

C. R. S. Manders

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Petrzilka, V.

Professor August Zacek at seventy. P. 107
CESKOSLOVENSKY CASOPIS PRO FYSIKU. (Ceskoslovenska akademie ved.
Ustav technicke fysiky) Praha
Vol. 6, no. 1, Jan. 1956

Source: EEAL - LC Vol. 5. No. 10 Oct. 1956

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

VACLAV PETRZILKA

The dependence of the developed density of photographic emulsions on the energy of the β radiation used for exposure. Miroslav Rozkos and Václav Petrzilka (Fac. Nuclear Phys., Prague). *Čechoslov. Fr. Fyz.* 6, 237-45 (1956)(in Russian, English summary).—The developed d. of a photographic emulsion which has been exposed to β radiation depends on the time of irradiation, the intensity of the source, and the av. energy of the particles. A quant. relation is derived on the assumption that the developed d. is proportional to the energy lost by the particles in the emulsion. The validity of this relation has been verified by expts. with β radiation sources, S^{35}, P^{32}, and $Sr^{90} + Y^{90}$. The results agree with theoretical prediction up to an exposure of 7×10^7 β particles in the energy range from 0.169 mev. to 2.35 mev. The relation has the form, $D = (D_\infty/\beta)(\beta - e^{-f_1/T} - e^{-f_2/T})$, where the consts. D_∞ and ν are detd. by the nature of the emulsion, and the variable, T, is the time of irradiation. The magnitudes of f_1 and f_2 are related to the av. energy and intensity of the β radiation, by a series of equations which are included in the text.

G. W. Luckey

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Petrzilka Vaclav

Czechoslovakia/Nuclear Physics - Instruments and Installations. Methods of Measurement and Investigation C-2

Abst Journal : Referat Zhur -/Fizika, No 12, 1956, 33895

Author : Rozkos, Miroslav and Petrzilka, Vaclav

Institution : Department of Technical and Nuclear Physics, Prague, Czechoslovakia

Title : Dependence of the Blackening of Photographic Emulsions on the Energy of β-Radiation

Original Periodical : Ceskosl. casop. fys., 1956, 6, No 3, 287-295

Abstract : A dependence is derived for the blackening of the photo emulsion on the number and energy of the β particles. The curves obtained are compared with the blackening of P^{32}, S^{35} and $Sr^{90} + Y^{90}$ by β particles.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

[illegible], V.

Progress in the development of [illegible] installations [illegible] the United Institute of Nuclear Research.

p. 217 (Jaderna energie) Vol. 3, no. 7, July [illegible], Prahe, Czechoslovakia

SO: [illegible] (EAI) LC, Vol. 7, No. 1, Jan. [illegible]

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, V.

Discovering of antiprotons,

P. 209(Cexkoslovenska Morfologie. Vol. 5, no. 4, 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, V.

Fission of the atom nuclei and the thermonuclear reaction, the basis for the use of nuclear energy on a large scale.

P. 48, (Sbirke Vynalezu) Vol. 6, no. 3, Mar. 1957, Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, V.

Physical properties of radioactive isotopes used in technology; in honor of Dionyz Illkovic at fifty. p. 25. (Mathematicko-Fyzikalny Casopis, Vol. 7, No. 1, 1957, Bratislava, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAI) LC, Vol 6, No. 8, Aug 1957. Uncl.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

[illegible]

[illegible] Nuclear Physics [illegible]

Ref Jour : Ref Zhur - Fizika, [illegible]

Author : Petrzilka, Vaclav
Inst : Not Given
Title : Development of the Joint Institute for Nuclear Research in the City of Dubna.

Orig Pub : Vest. CSAV, 1957, 66, No 7-8, [illegible]

Abstract : No abstract

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

PETRZILKA, VACLAV.

Science

Petrzilka, Vaclav. Metody pro detekci a registraci jaderneho zareni. Praha, Statni pedagogicke nakl., 1958. 202 p. (Ucebni texty vysokch skol)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 12, Dec. 58

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

CZ/37-58-5-19/19

AUTHOR: Petržílka, Václav

TITLE: Professor Dr. F. Běhounek, 60th birthday (Prof.Dr.František Běhounek šedesátníkem)

PERIODICAL: Československý Časopis pro Fysiku, 1958, Nr 5, pp 631-632 (Czech)

ABSTRACT: Professor Běhounek is one of the outstanding Czech radiologists. In 1920 Běhounek was accepted for a one year study at the Institut de Radium, Paris by Madame Curie. In 1922 he obtained his degree of Doctor of Natural Sciences. In 1926 he became a member of the polar expedition organised by Amundsen, Ellsworth and Nobile and two years later he participated in the expedition of Nobile with the airship "Italia". In 1933 he was nominated director of the State Radiological Institute. Between 1936 and 1938 he built an observatory for studying atmospheric electricity at Štrbské Pleso. In 1953 he was nominated as Corresponding Member of the Czechoslovak Ac.Sc. and in 1954 as a Professor of the Mathematics-Physics Faculty, Charles University in the field of radioactivity. He is now the head of the Chair for Nuclear Chemistry at the Faculty of Technical and Nuclear Physics,

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C-7

CZECHOSLOVAKIA/Nuclear Physics - Cosmic Rays

Abs Jour : Ref Zhur - Fizika, No 4, 1959, No 5267

Author : Pernegr J., ~~Petrzilka V.,~~ Vrana J.
Inst : Physics Institute, Czechoslovak Academy of Sciences, Karlovy University, Pragus, Czechoslovakia
Title : Interaction of Nucleons at Energies of 10^{14} - 10^{15} ev/Nucleon

Ori Pub : Ceskosl. casop. fys., 1958, 8, No 1, 67-76

Abstract : Description is given of a jet of type of 0 + 14 a at an energy of $3.3^{+5.3}_{-2.2} \times 10^{14}$ ev/nucleon, observed in a stack of nuclear emulsions exposed during the time of the exposition on the river Po. From the axis of the meson jet at a distance of 4.2 mm from the primary interaction, there was observed a secondary interaction with an unexpectedly small multiplicity of the type 0+4, apparently produced by the following nucleon from the primary particle. The particles of a narrow cone form an angle on the order of 10^{-4} radians with the axis of the jet, and the particles of the diffused cone form an angle on the order of 10^{-2} radians. Such a clear anisotropy

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C.

CZECHOSLOVAKIA/Nuclear Physics - Cosmics Rays.

Abs Jour : Ref Zhur - Fizika, No 7, 1959, 15038

Author : Pernegr, Jaroslov; Petrzilka, Vaclav, Vrana, Jiri

Inst : Institute of Physics, Czechoslovak Academy of Sciences, Charles University, Prague, Czechoslovakia

Title : An Interaction of Nucleons at an Energy Between 10^{14} and 10^{15} ev/nucleon

Orig Pub : Chekhosl. fiz. Zh., 1958, 8, No 2, 137-147, 268a

Abstract : In an emulsion chamber, exposed at an altitude of 33 km, an interaction of the type $(0 + 14)\alpha$ was observed at an energy $(3.3 \pm^{5.3}_{-2.2}) \times 10^{14}$ ev/nucleon. Along the axis of the "jet" there was observed a second interaction with very small multiplicity ($n_s = 3$ or 4), probably caused by another nucleon of a primary α particle.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

FERRZILLA, V.; TUCH K, Z.

Meeting of the Scientific Council of the Joint Institute for Nuclear Research in Dubna. Jaderna energie 10 no.11:[illegible] '64.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

SOV/[illegible]

3.9000
3.2400

AUTHOR Petržilka, Václav, Corresponding Member

TITLE The Discovery of Two Extraordinarily Intensive Zones of Cosmic Radiation Around the Earth

PERIODICAL Věstník Československé akademie věd, 1959, No. [illegible], pp. [illegible]

TEXT The discovery of cosmic radiation was made possible by means of measuring instruments in high-altitude balloons which proved that the intensity of radiation increases with the altitude and, therefore, this radiation is supposed to come from space. Thence "cosmic" radiation. The measuring instruments in the second Soviet satellite proved the increase in intensity of cosmic radiation beginning at an altitude of 200 km with a pronounced rapid acceleration between 400 and 700 km. Professor N.S. Věrnov and his collaborators tried to explain this increase in intensity of cosmic radiation over 200 km in their work [Ref 3] by "global corpuscular radiation" consisting of charged particles flowing in the magnetic field. The measuring instruments in the third Soviet satellite, equipped with a scintillation counter brought further experimental facts about this phenomenon, particularly, as far as the contribution by electrons and protons to an increase in intensity of cosmic radiation at altitudes over [illegible] km is

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

The Discovery of Two Extraordinary Intensity Zones of Cosmic [illegible] the Earth

[illegible] Sodium iodide NaI (Tl) activated by thallium was [illegible] crystal S, which was deposited inside the aluminum [illegible] that it was surrounded by a layer [illegible] of the multiplier [illegible] 40 mm [illegible] and dynode made possible the [illegible] radiation in the scintillation crystal. The [illegible] proved that there are two zones of cosmic radiation around the Earth, [illegible] the first one was called "[illegible]" because it was observed in [illegible] latitudes of more than [illegible] The second one was called "[illegible]" because it was observed at a distance of about [illegible] km from the Earth [illegible] equipped with the Geiger Müller [illegible] instruments [illegible] the Earth [illegible]

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CZ/2-59-5-1/33

The Discovery of Two Extraordinarly Intensive Zones of Cosmic Radiation
the Earth

According to Věrnov it is more useful to call the zones "outer" (polar) and "inner" (tropic) zone. As far as the composition of the inner zone is concerned, it is formed partly by protons, partly by electrons according to van Allen. The protons with an energy of the order of 100 Mev form the hard structure of the zone while the electrons with an energy of up to 1 Mev constitute the soft zone, having an energy spectrum which decreases quickly to low energies. Protons and electrons in the inner zone come most probably from the disintegration of the neutrons which originate during the interplay of cosmic radiation with the atmosphere of the Earth and its surface. It is possible that even the particles (electrons) from the outer zone are mingling with those of the inner zone, the outer zone consisting entirely of electrons. Finally, there is no doubt that similar zones of a high radiation intensity exist around other planets like Moon, Mars and Venus. The zone around the Moon probably will not have a high intensity, if it exists at all, considering the small magnetic momentum of the Moon. There are 7 diagrams and 20 references, 10 of which are Soviet, 4 Czechoslovakian and 6 English.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

CZ/2-59-5-26/33

AUTHOR: Petržilka, Václav, Corresponding Member

TITLE: Conference on Cosmic Radiation and on the Physics of High Energies in the USSR

PERIODICAL: Věstník československé akademie věd. 1959, No 5, pp 664-676

TEXT: The international conference on cosmic radiation was held in July 1959 in Moscow. The following scientists and their papers are mentioned: Academician D.V. Skobelcyn - The Importance of Cosmic Radiation for the Knowledge of Structure and Characteristics of Atomic Nuclei; Doctor Grigorov - Spectrum of the Electron-Photon Cascades; Professor Janossy - Determination of the Absorption Length of Widespread Airshowers; Professor Hrimyanov - Division of Particles Originated During Interplays and During the Pulse between 240 [illegible] Mev/c; Doctor J. Pernegr and Šimak - Results Achieved During the [illegible] Asymmetry of Angle Composition of Particles Sent Off During Interplay of [illegible] Radiation Particles with an Atomic Nucleus; Professor Varfolomeyev - Experimental Results on 15 Electron Photon Cascades; Professor Alikhanian - Angle Division of the Mesons μ; Doctor Chudakov - Report on Measuring the Cherenkov Radiation in Widespread Showers of Cosmic Radiation at the Moscow University

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ACC NR: AP6001529 SOURCE CODE: CZ/0038/65/011/010/0361/0368

29

AUTHOR: Petrzilka, Vaclav—Petrzhilka, V.

ORG: Faculty of Technical and Nuclear Physics, Prague (Fakulta technicke a jaderne fyziky)

TITLE: Discovery of proton radioactivity

SOURCE: Jaderna energie, v. 11, no. 10, 1965, 361-368

TOPIC TAGS: proton, radioactive decay, particle bombardment, particle beam, atomic physics

ABSTRACT: The discovery of a proton decay of atomic nuclei having an excess of protons is reported. These nuclei were produced by bombarding atoms of some elements either in a beam of heavy ions or in a beam of fast protons. Radioactive nuclei emitted protons either in a process analogous to the radioactive α decay, or after the β^+ transition, by a mechanism similar to the delayed neutron emission during fission of nuclei. It is shown that there exists the possibility of producing nuclei decaying with the proton emission from practically all elements. Orig. art. has: 15 figures, 2 tables. [NA]

SUB CODE: 20 / SUBM DATE: none / OTH REF: 011 / SOV REF: 011

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRILKA, V., prof.

Experiences in the present operation of thermal reactors in nuclear power plants. El tech obzor 53 no.8:[illegible]-49 Ag '64.

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L 1644-66 FSS-2/EWA(j)/FCC/EEC(b)-2/EWP(k)/EWA(h) JHB/WS-4

CZ/0037/64/000/006/0542/0547

ACCESSION NR: AP5024324

67
B

AUTHOR: Petrzilka, Vaclav A.
44,55

TITLE: Ball lightning

SOURCE: Ceskoslovensky casopis pro fysiku, no. 6, 1964, 542-547

TOPIC TAGS: lightning, plasma physics, quantum theory, atmospheric model

ABSTRACT: Ball lightnings are described and a detailed account is given of known experimental facts obtained by random observations. Models of ball lightnings are described and the possible relation between the theory of the ball lightning and the plasma theory is discussed. The possibility of using results of the quantum theory of solids in the physics of superdense high-temperature plasma is pointed out. Orig. art. has: 6 formulas.

ASSOCIATION: Ustav fyziky plazmatu CSAV, Prague (Plasma Physics Institute, Czechoslovak Academy of Sciences)
44,55

SUBMITTED: 12Sep63 ENCL: 00 SUB CODE: ES, ME

NR REF SOV: 000 OTHER: 018 JPRS

Card 1/1

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PETRZILKA, Vaclav A.

Ball lightning. Ce cas fys 14 no.6:542-547 '64.

1. Institut of Plasma Physics, Czechoslovak Academy of Sciences, Prague.

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L 10235-63 BDS/EWT(m)--AFFTC/ASD--IJP(C)

ACCESSION NR: AP3000041 S/0056/63/044/005/1497/1499

60
59

AUTHOR: Bem, Ya.; Bohm, J.; Petrzilka, V.; Suk, M. (2)

TITLE: Peripheral pion-nucleon interactions at 7 Bev.

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1497-1499

TOPIC TAGS: Pion-nucleon interactions, one-pion exchange model, Fermi statistical theory

ABSTRACT: An attempt is made to select peripheral negative pion-nucleon interactions which can be described by a one-pion exchange model. The criteria used to select the events are listed. Altogether, 101 events satisfied the criteria from among 951 Pi-minus N interactions. From the fact that the number of (Pi, N) and (Pi, Pi) isobars among 169 events is relatively small, it is concluded that the number of events going through the isobar channels is only a small fraction of the total number of the Pi-minus N interactions at 7 Bev.
"The authors would like to thank E. Fenyves, K. Lanius, and K. D. Tolstov for permission to use their experimental data, and J. Pernegr and V. Simak for an

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L 10235-63
ACCESSION NR: AP3000041

interesting discussion and advice." Orig. art. has: 2 figures, 8 formulas.

ASSOCIATION: Czechoslovak Technical University, Prague

SUBMITTED: 14Dec62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH NR REF SOV: 002 OTHER: 005

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

BOHÁ, J.; [illegible], V.; SUK, M.

On peripheral pion-nucleon interactions at [illegible] GeV.
Chekhosl fiz zhurnal 13 no.10:703-709 '63.

1. Fakulta technicke a jaderne fyziky, Ceske vysoke ucen[illegible] technicke, Praha.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, Vaclav, prof.m RNDr.

Development of the Joint Nuclear Research Institute and of its scientific work. Jaderna energie 3 no.7:216-217 Jl '57

1. Fakulta technicke a jaderne fysiky, Karlova unicersita.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, V.

Discovery of two zones of cosmic radiation of a very high intensity around the world. Pokroky mat fyz astr 5 no. 1:53-64. '60

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETROVA, V., PEROVA, L. G., [illegible], M. [illegible], S. A.

"Inelastic Interact[illegible]

report presented at Intl. Conference on High Energy Physics, Geneva, 6-11 July 1962

Joint Institute for Nuclear Research
Laboratory of High Energies, Dubna, 1962

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, Vaclav

Discovery of two very intensive zones of cosmic radiation around the world. Vestnik CSAV 68 no.5:557-567 '59.

1. Clen korespondent Ceskoslovenske akademie ved.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240630008-7

PETRZILKA, Vaclav

Conferences on Cosmic Radiation and High Energy Physics in the Soviet Union. Vestnik CSAV 68 no.5:664-676 '59.

1. Clen korespondent Ceskoslovenske akademie ved.

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PETRZHILKA, V

S/627/60/002/000/025/027
D299/D304

3.2410

AUTHORS: Fenivesh, E., Frenkel', A., Telbits, F., Pernegr, Ya., Petrzhilka, V., Sedlak, Ya., and Vrana, I.

TITLE: Investigating high-energy electron-photon cascade in emulsions

SOURCE: International Conference on Cosmic Radiation. Moscow, 1959. Trudy. v. 2. Shirokiye atmosfernyye livni i kaskadnyye protsessy, 307-310

TEXT: The energy spectrum of the primary photon was determined; the energy spectrum of pairs formed at depths of up to 1.5 units was studied. The obtained spectra were compared with the distribution based on Bethe-Heitler's theory, and with that based on Mikhal's formulas (a further development of the Landau approximation). The energy E_0 of the primary photon was determined by the Chudakov-Perkins effect, by the longitudinal and lateral shower development, and also by Pinkau's method. The values for the primary energy,

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obtained by shower development in the approximations A and B, were underrated. A more accurate energy estimate is obtained by means of the curves of A. A. Varfolomeyev and I. A. Svetlolobov (Ref. 11: ZhETF, 36, 1771, 1959). The data of Ref. 11 yielded a higher value for the primary energy. In the following, a primary energy of $2 \cdot 10^{12}$ ev. is assumed. The energy of electron pairs was determined either by E. Lohrmann's method (Ref. 15: Nuovo Cim., 2, 1029, 1955) or by measuring multiple scattering. In some cases both methods were used. The results are shown in a table and in 2 figures which also exhibit (for comparison) two theoretical curves corresponding to Bethe-Heitler's and Migdal's formulas, respectively. The authors conclude that by studying only one or a few cascades, no definite decision can be made as to the validity of either Bethe-Heitler's or Landau-Migdal's theory. In this light, the present investigation should be considered as a contribution to the general statistics of cascades, investigations of a larger number of shower cascades being required before reaching a definite conclusion. The authors express their thanks to Professors Yanoshi, Farkas and Danysh. There

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[illegible] high energy ...

[illegible] figures, [illegible] tables and [illegible] references: [illegible]
[illegible]. The references to the [illegible] are as follows: D. H. Perkins, Phil. Mag., [illegible]; K. Pin-[illegible] Phil. Mag., [illegible], 1389, 1957; J. C. Butcher, B. A. Chartres and H. Messel. Nuc. Phys., 6, 271, 1958; J. Nishimura and K. Kamata, Prog. Theor. Phys., 7, 185, 1952.

AUTHOR CITATION: Tsentral'nyy issledovatel'skiy institut fiziki, Otdeleniye kosmicheskikh lucheY (Central Research Institute of Physics, Cosmic Ray Section, Budapest); Fizicheskiy institut Akademii nauk (Physics Institute of the Academy of Sciences, Prague)

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D244/D301

3.2420

AUTHOR: Petržílka, V.

TITLE: The discovery of two cosmic-radiation belts surrounding the earth with extraordinary high intensity

PERIODICAL: Pokroka matematiky, fysiky a astronomie, no. 1, 1960, 53-64

TEXT: The author gives a comprehensive report on high-intensity cosmic radiation recorded by instruments installed in Soviet and US satellites and rockets. The information contained in this article is based on reports delivered by Professor S.N. Vernov and and collaborators and Professor J.A. Van Allen at the Moscow International Conference on Cosmic Radiation in July 1959, and on Soviet and US literature authored mostly by the above two scientists. Geiger-Müller counters installed in the second Soviet earth satellite recorded increased cosmic radiation starting at an altitude of 200 km with a very prominent increase at altitudes of 400-700 km. Based on these measurements, so-called isocosms

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The discovery of two...

(i.e. lines of identical cosmic-radiation intensity at equal altitudes) were established which proceed parallel to geographic parallels and increase with the geographical latitude. The radiation measured by Vernov and his colleagues at equal altitude between 30° and 150°E and at 43°, 54°, and 62°N produced 18, 27 and 36 impulses/sec on the registration devices of the second earth satellite. (The same instruments recorded a 50% radiation-intensity increase at 58° geographic latitude on 7 Nov 57 from 0436 to 0449 hours astronomic time). Vernov attributes the increased cosmic-radiation intensity to a so-called "terrestial corpuscular radiation". According to his theory, the earth and its atmosphere becomes, under the influence of cosmic radiation, a source of neutrons which protrude into high altitudes since they are not influenced by the magnetic field of the earth. Protons and electrons, originating from the decay of these neutrons, move then along magnetic lines of force and approach one of the poles till to a certain magnetic latitude λ_{max}, where the angle θ between the vector of velocity (v) and the vector of the terrestial magnetic field (H) increases to 90°. The charged particles then

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The discovery of two...

reverse their course and travel on the same line of force toward the other magnetic pole. At high altitudes (1,000 - 3,000 km), charged particles originating from neutrons with energies $\approx$ 1 mev, perform 10^8 and more flights between turning points and possess great energies. Vernov and his collaborators also calculated the amounts of electrons and protons originating per sec above certain magnetic latitudes, and the intensity of "terrestial corpuscular radiation" at certain geomagnetic latitudes and altitudes (Ref. 3 N.S. Vernov, N.L. Grigorov, J.P. Ivananko, A.J. Lebendinskiy, V.S. Myrzin, A.E. Chudakov Dokl. AN SSSR, 124 (1959), 1022). It must be admitted that calculated and experimentally measured values are not in quantitative agreement, but the calculations must still be considered a theoretical attempt to explain the increase of radiation intensity at altitudes around 1,000 km. Additional data on cosmic radiation, expecially its increase caused by electrons and photons, were obtained from the scintillation counter of the third Soviet satellite. The instrument, intended to record the frequency of impulses corresponding to energies $\approx$ 35 kev, employed an NaI(Tl) crystal shielded with an Al casing. The anode and dynode current

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The discovery of two...

were measured simultaneously, a method which allows the entire ionization and the energy spectrum of the cosmic radiation to be measured. A special circuitry allowed currents as low as 10^{-10}A to be measured. The data were radiotelegraphically conveyed to the earth by the transistorized "Majak" 3-channel transmitter operating at a frequency of 20 Mc/sec. Data, continuously transmitted during the orbiting, led to the conclusion that the earth is surrounded by two belts of highly-intensive cosmic radiation. The first belt, called the "polar zone" or "outer zone" develops at geomagnetic latitudes above 60° and at altitudes above 300 km. It is predominated by electrons with energies in the order of 100 kev. The flux in this zone is estimated $10^3 - 10^4$ particles/cm^2/sec./ster. The second belt, called the "equatorial zone" or "inner zone" was also observed by Van Allen and measured by instruments installed in Explorer I and II satellites. It is dominated by large numbers of protons, develops at altitudes around 1,000 km and does not exceed 50° of geomagnetic latitude. The radiation intensity measured in this zone is of three orders higher than that of primary cosmic radiation. The Soviet cosmic

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The discovery of two...

rocket launched on January 2, 1959 was equipped with two Geiger-Müller counters and two scintillation counters for registering radiations with threshold energies of 45 kev, 450 kev and 4.5 mev at altitudes of 8,000 .. 150,000 km. It was found that an energy maximum exists at 26,000 km, while the intensity at 55,000 km drops practically to zero. It was again confirmed that the radiation intensity depends not only on the altitude, but also on the geomagnetic latitude. Intensities measured at 60° line of force (according to Vernov and his colleagues this line of force which intersects the earth surface at 60° geomagnetic latitude) at 400, 1,800, 5,600, and 14,000 km are in the ratio of 1 : 20 : 200 : 700. The integral energy spectra for radiation at altitudes of 40,000 .. 50,000 km [Abstractor's note: Here called the "outer zone"] were determined with the aid of a shielded scintillation counter and supplemented by measuring results of Geiger-Müller counters. It was found that this region is dominated by Roentgen radiation with an energy of 50 ~ 69 kev. As to the intensity of neutrons in the "outer zone", Vernov and his colleagues assume that values vary at different altitudes and reach a minimum of ~ 25 kev in the center of the zone (intensity

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The discovery of two...

maximum). The energy of neutrons in the intensity maximum can also be derived from data recorded by the second (unshielded) scintillation counter which measured a flux of $2 \cdot 10^{11}$ ev/cm^2/sec/ster. Since the first scintillation counter (shielded with an Al layer) recorded under same conditions a flux of $1.5 \cdot 10^9$ ev/cm^2/sec/ster, the exponent of the neutron-energy spectrum $N(>E) \sim E^{-\gamma}$, can be estimated $\gamma \sim 5$; for regions of lower intensity (borders of the zone), the exponent becomes $\gamma \sim 3$. The flux measured by the unshielded scintillation counter of the Soviet cosmic rocket does not fully agree with the flux measured by Van Allen (10^{15} ev/cm^2/sec/ster). This difference might be caused by slow protons existing in the "outer zone". The article also lists some data recorded by US Explorer and Pioneer satellites. In conclusion, the author assumes that similar belts of increased radiation intensity will also exist around other planets of the solar system. The radiation around the Moon will either be very intense, or not exist at all, due to the weak magnetic moment of the Moon. There are 7 figures and 20 references. 13 Soviet-bloc and 7 non-Soviet-bloc. The reference to the four most recent English-language publications reads as follows: J.A. Van Allen, C.E.

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The discovery of two...

Mc Ihwain and G. H. Ludwig, J. Geophys. Res. 64 (1959), 271; J.A. Van Allen and L.A. Frank, Nature, 183 (1959), 430; J.A. Van Allen and L.A. Frank, Nature (printing); J.A. Van Allen and collaborators, Report Conference on Cosmic Radiation, Moscow, July 1959.

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BELYAKOV, V.A.; VAN SHU-FEN' [Wang-Shu-fên]; GLAGOLEV, V.V.; DALKHAZHAV, N.; LEBEDEV, R.M.; MEL'NIKOVA, N.N.; NIKITIN, V.A.; PETRZHILKA, V.; SVIRIDOV, V.A.; SUK, M.; TOLSTOV, K.D.

Inelastic interactions between 7 Bev π^--mesons and nucleons. Zhur. eksp. i teor. fiz. 39 no.4:937-947 O '60. (MIRA 13:11)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons) (Nucleons)

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PetRzilkey, V.

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PHASE I BOOK EXPLOITATION CZECH/5188

Petržílka, Václav, Professor, Doctor, Corresponding Member of the Czechoslovak Academy of Sciences; Josef B. Slavík, Professor, Doctor, Engineer; Ivan Šolc, Doctor; Oldřich Taraba, Engineer, Doctor; Jan Tichý, Doctor, and Jiří Zelenka, Engineer

Piezoelektřina a její technické použití (Piezoelectricity and Its Technical Use) Praha, Nakl. Československé akademie věd, 1960. 534 p. 1,300 copies printed.

Sponsoring Agency: Československá akedemie věd. Sekce matematicko-fysikální. Scientific Editor: Emanuel Klier, Docent, Doctor; Reviewer: Josef Beneš, Professor, Doctor; Ed. of volume: Antonín Burda.

PURPOSE: The book is intended for students of schools of higher education, physicists, and for scientific and technical personnel concerned with the use of piezoelectricity in electrical engineering, construction, chemistry, biology, medicine, and other fields of science.

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Piezoelectricity and Its Technical Use CZECH/5188

COVERAGE: The book consists of two parts. The first part deals with the basic physical properties of piezoelectric crystals, the vibrations of piezoelectric resonators, and the technology of producing crystal elements. The second part is devoted to applications of piezoelectric crystals in various branches of engineering, particularly the following: the control of the frequency of broadcasting stations and radio transmitters in general; the production of very selective filters used in long-distance telephone lines and single-sideband transatlantic radiotelephone systems; the production of stable oscillators and timekeeping systems; the generation of ultrasonic waves; and measuring technique. About twenty years ago a book written by two of the present authors, V. Petržílka and J. B. Slavík, was published under the title "Piezoelektřina a její použití v technicke praxi" (Piezoelectricity and Its Uses in Engineering Practice). In 1951 the book "Piezoelektřina I " (Piezoelectricity I), written by V. Petržílka and consisting of a major expansion of the physics section of the earlier edition, was published. The present book, written in cooperation with former students of the

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original authors, represents, therefore, a third version of their work. V. Petržílka edited Part I and also wrote Ch. I. I. Šolc wrote Ch. V, Par. 4 of Ch. VII, and Ch. XI. J. Tichý wrote Ch. II (except Par. 6), Chs. III, IV (except Par. 6), VI (except Pars. 6 and 9), VII (except Pars. 4 and 5), VIII and IX. J. Zelenka wrote Par. 6 of Ch. VI, Par. 5 of Ch. VII, and Ch. X. V. Janovec, Candidate of Sciences, wrote par. 6 of Ch. II, dealing with ferroelectric materials, Par. 6 of Ch. IV, and, together with Doctor H. Arend, Par. 9 of Ch. VI. Part II was written by O. Taraba in collaboration with J. B. Slavík, who also edited this part of the book. The authors thank the following persons for help in editing the manuscript: J. Hanzl, Engineer; C. Höschl, Docent, Engineer; K. Hruška, Graduated Physicist; K. Kratochvíl, Graduated Physicist; J. Kraus, Engineer; J. Pátý, Engineer; J. Rais, Docent, Doctor, Engineer; L. Sodomek, Graduated Physicist, and J. Šmíd, Candidate of Sciences, Engineer. They also thank O. Bareš, Engineer, and Jar. Tarabova for help in drawing the figures and preparing the photographs in Part I and Part II, respectively. References follow each chapter, and a general list of 132 references is given at the end of the book. There is also

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a glossary of translations of special terms in piezoelectricity into Czech from the following languages: Russian, English, French, and German.

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